

## CHAPTER 1

### GENERAL

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#### 1-1. Purpose.

This manual presents general provisions and criteria for planning, designing, and constructing lighting systems for Army airfields, heliports, and helipads.

#### 1-2. Scope

Criteria herein are applicable to all Army airfields, heliports, and helipads in the Continental United States (CONUS), Alaska, and Hawaii. The criteria are recommended for use as a basis of design for overseas Army operations in order to promote standardization of requirements for flight safety.

#### 1-3. References

Appendix A contains a list of references used in this document.

#### 1-4. Deviations

Lighting facilities for airfields, heliports, and helipads other than those defined herein will not be provided without prior approval by HEADQUARTERS U. S. ARMY CORPS OF ENGINEERS (HQUSACE), CEMP-ET.

#### 1-5. Procurement of lighting system materials and equipment for Army airfields, heliports, and helipads

Lighting system materials and equipment for Army airfields, heliports, and helipads will be included in the construction contract plans and specifications as contractor furnished and contractor installed. Construction contract plans and/or specifications will include a brief description of items, a brief design premise, with operational and inspection information, referenced Military Specification (Mil. Spec.) or other specification covering each item, and the Military designator or Federal Aviation Administration (FAA) designator with any specific reference material. This data may be obtained from AFM 88-14, and/or applicable FAA Standards. Use of names of equipment manufacturers in contract plans and specifications will be avoided. However, because of the special category of many of the material and equipment items, a general list of known equipment manufacturers prepared from those mentioned in the data for preparing contract plans and specifications may be furnished to prospective bidders and/or the contractor at the bidder's or contractor's request. When materials or equipment items submitted by the contractor for approval are listed in the data used for preparing the contract plans and

specifications, it may be considered as prima facie evidence that the items are satisfactory and may be approved for the installation.

#### 1-6. Advertising for lighting facilities

The following criteria for the advertising of lighting facilities at airfields, heliports, or helipads is in effect for all Army projects in CONUS, Alaska, and Hawaii. Normally, the contract for installation of complete lighting facilities at an airfield, heliport, or helipad will not be combined with the general construction or paving contract for such facilities. An exception to this policy will be granted when satisfactory proof that a combination-type contract is in the best interest of the Government has been submitted to and approved by HQUSACE, CEMP-ET, WASH DC 20314-1000. When separate contracts are contemplated, ducts for cable crossings under movement area paving, concrete light bases in paved areas, handholes, manholes, longitudinal ducts, duct markers, and components of related work that can be accomplished under the general construction or paving contract will be so accomplished rather than deferred until the remaining portion of the lighting facilities contract can be separately advertised. Advertising of the remaining portion of the lighting facilities for the airfield, heliport, or helipad will be authorized at the appropriate time to complete the project on schedule.

#### 1-7. Basis of measurement in procurement

Centerline measurements (in feet) will be used in programing, justifying, or budgeting for runway, threshold, taxiway, taxilane, hoverlane, and approach lighting systems. Linear feet will be used for programing, justifying, or budgeting perimeter lights at helipads. Lighting for apron access and engine runup area taxiways will be shown as a primary or supporting item, as applicable, and will be measured as taxiway lighting. Auxiliary lights and visual or electronic navigational aids, including but not limited to apron or parking area floodlights, helipad floodlights, protective and security floodlights, obstruction lights, beacons, and wind direction indicators will be measured on a per unit basis, and shown as primary or supporting items, as applicable.

#### 1-8. Design analysis

A general design analysis covering the major features or components of the lighting facilities for the Army airfield, heliport, or helipad will be furnished for each project. Design analysis will include sufficient descriptive information computations, and data such as:

- a. Applicable rules, regulations, and engineering manuals used or followed.
- b. Electric power supply characteristics and computed loads, with demand factors where applicable.
- c. General description and characteristics of the airfield, helipad, heliport lighting system, and lighting control system, including miscellaneous visual aids and auxiliary lighting.

- d. Computations and data used in determining sizes and selection of major items of equipment and conductors.

### 1-9. Abbreviations used in this manual

The following abbreviations pertaining to Army aviation lighting are used in this manual:

<u>Abbreviation</u>	<u>Term</u>
ALSF-2 .....	High Intensity Approach Lighting System with Sequenced Flasher.
AWG .....	American Wire Gage.
CHAPI .....	Chase Helicopter Approach Path Indicator.
EMT .....	Electric Metallic Tubing.
GCA .....	Ground Control Approach Radar System.
IFR .....	Instrument Flight Rules.
ILS .....	Instrument Landing System.
IMC .....	Instrument Meteorological Conditions.
KW .....	Kilowatt.
kVA .....	Kilovolt Ampere.
LDIN .....	Lead-In Lighting System.
MALS .....	Medium Intensity Approach Lighting System.
MALSF .....	Medium Intensity Approach Lighting System With Sequenced Flasher.
MALSR .....	Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (RAIL).
ODALS .....	Omnidirectional Approach Light System.
PAPI .....	Precision Approach Path Indicator.
PT .....	Point of Tangency.
REIL .....	Runway End Identifier Lights.
SALS .....	High Intensity Short Approach Lighting System.
VFR .....	Visual Flight Rules
VMC .....	Visual Meteorological Conditions.